R–terminal subunit: A free amino terminal group on each recognition subunit is not necessary for the subunit function. This group can be functionalized by an R molecule to modify the pharmaco-dynamic properties of the molecule and to produce a more constrained molecule. The R can be H_3C-$(CH_2)_n$-CO with n=0 (acetyl), n=4 (caproyl) and n=14 (palmitoleyl). R can also be the amino acid cysteine. In the case of the tetrameric peptide the sulfur groups could be used for the formation of an intra molecular di-sulfide bridge, generating a constrained bi-cyclic molecule.

In another embodiment of the present invention, there is provided a method of inhibiting polymorphonuclear leukocyte polarization, chemotaxis and infiltration into tissue activated by a neutrophil chemoattractant in an individual by administering the pharmaceutical composition of the present invention to the individual. Representative neutrophil chemoattractants include N-acetyl-PGP, N-acetyl-PGX, N-methyl-PGX, N-methyl-PGP and small peptide chemoattractants containing proline and glycine. Still preferably, the pharmaceutical composition is administered at a concentration range of from about 1 μM to about 100 mM, depending on the peptide.

In still another embodiment of the present invention, there is provided a method of treating an eye disease in an individual by administering the claimed pharmaceutical composition. Preferably, the pharmaceutical composition is administered at a concentration range of from about 1 μM to about 100 mM, depending on the peptide. Still preferably, the eye disease can be alkali-injured eye, chemically injured eye or inflammatory disease of the eye.

As used herein, the term "multimer" shall refer to a dimer, tetramer or octamer.

The following examples are given for the purpose of illustrating various embodiments of the invention and are not meant to limit the present invention in any fashion.

EXAMPLE 1

Materials

Hanks balanced salt solution (HBSS) was purchased from Gibco Laboratories (Chagrin Falls, OH). Calcium chloride, magnesium chloride, sodium chloride, sodium phosphate monobasic and sodium

phosphate dibasic, glutaraldehyde, and Ficoll (Type 400) were obtained from Sigma Chemical Co (St Louis, MO). Hypaque-76 was acquired from Winthrope Laboratories (New York, NY). Leukotriene B_4 (LTB_4) was purchased from Biomol Research Laboratories (Plymouth Meeting, PA). Amino acids and resins used in the synthesis of peptides were from Perseptive Biosystem (Framingham, MA). N,N-Dimethylformamide, methylene chloride and other solvents used in the synthesis were from Fisher Scientific (Fair Lawn, NJ).

EXAMPLE 2

Complementary Peptide Design

The complementary sequences to PGP were designed based on the possible coding triplet for proline and glycine and on the hydropathic value of these two amino acids. Glycine is a slightly hydrophilic amino acid and normally complemented by serine or threonine. The hydropathic characteristics of proline are not well